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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/954,603   | 09/17/2001  | Craig N. Eatough     | 3195-6715US         | 8272             |
| 24247  | 7590        | 06/21/2005           | EXAMINER            |                  |
| TRASK BRITT<br>P.O. BOX 2550<br>SALT LAKE CITY, UT 84110 |             |                      | DOROSHENK, ALEXA A  |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1764                |                  |
| DATE MAILED: 06/21/2005                                  |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/954,603

Applicant(s)

EATOUGH ET AL.

Examiner

Alexa A. Doroshenk

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 32-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32-78 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendments presented in the After Final Amendment of May 27, 2005 have been entered and overcome the previously made 35 USC 112, first paragraph rejections..
2. Upon further consideration, prosecution is hereby re-opened and a new grounds of rejection is presented below.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 50-60, 68 and 69 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The subject matter which was not described in the application as filed is that directed toward "without drying the fines" in claim 50 and "without regard to a free swelling index value" in claim 68. Since the subject matter was not described or conveyed in the application as filed, doubt is raised as to possession of the claimed invention at the time of filing.

***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 32-37, 40-46, 48-53, 55-57, 59-75 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loebell (1,912,002) in view of Weber et al. (4,352,720).

With respect to claims 32-34, 41-43, 48, 50, 55, 61-64 and 67-72, Loebell discloses a fuel briquette which is comprised of finely divided mixtures of non-coking low volatile fuel such as anthracite culm (refuse coal screenings), hydrocarbon still residues (p. 2, lines 6 – 14) which are disclosed as coke residues and breeze and bituminous binder materials (p. 1, lines 8-9).

Loebell fails to disclose using the briquette to be processed in order to form coke after it is made.

Weber et al. teach a process for the production of coke which comprises: introducing a coal briquette (col. 1, lines 12-20) into a pyrolyzer (coking oven) (col. 2, lines 10-19); and discharging coke (45) and by-products from the pyrolyzer (69).

Since Weber et al. teaches that "coal mixtures of all types can be coked" (col. 2, line 30) it would have been obvious to one of ordinary skill in the art at the time the invention was made to feed the briquette of Loebell as the starting coal briquette in the process of Weber et al. in order generate a higher grade coke from the known briquette.

Weber et al. further discloses wherein the process comprises the steps of:

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separating the pyrolytic by-products by condensing means (fig. 2) into tar (31) and off gas (78);

using the tar as the binder in the mixture without discharging to the environment (col. 2, lines 43-46 and col. 7, lines 44-48); and

using the off gas as a source of fuel in the pyrolyzer without discharging to the environment (col. 7, lines 25-30).

It would have been further obvious to one of ordinary skill in the art at the time the invention was made to apply Weber's teaching to recycle the produced tar (which is a bituminous liquid) and use it as the binder in the briquette of Loebell since the briquette of Loebell requires a bituminous binder and the benefits of recycling are well known.

With further regard to claim 70, Loebell discloses wherein the relative amounts of the components of the mixture are adjusted to achieve a desired result (p. 4, lines 64-114) as well as Weber et al. (col. 2, lines 27-36).

With respect to claims 35, 44, 51 and 73, Loebell discloses wherein coal is finely divided (reads on crushed) prior to forming the briquette (p. 2, lines 9-11 and p. 4, lines 101-104).

With respect to claims 36, 45, 52 and 74, Loebell discloses wherein the mixture is formed into briquettes (solid objects) (p. 1, lines 1-11).

With respect to claims 37, 46, 53 and 75, Weber et al. discloses wherein the coke is discharged as solid objects (molded coke) (col. 6, lines 31-40).

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Art Unit: 1764

With respect to claims 40, 49 and 78, Weber et al. discloses wherein separating comprises cooling of pyrolytic by-products by condensing means (fig. 2) into tar (31) and off gas (78).

With respect to claims 56 and 57, Loebell discloses the claimed weight percent ranges of coal and coke (p. 4, lines 86-114).

With respect to claim 59, Weber et al. discloses wherein the pyrolyzing act comprises heating within the range of 800-1100°C (col. 2, lines 47-49).

With respect to claim 60, Weber et al. disclose the temperatures of only portions of the cooling system (fig. 2), but it is held that any temperature sufficient to produce tar would have been obvious to one of ordinary skill in the art without undo experimentation and therefore the cooling temperature is held an a result effective variable.

As such, without showing unexpected results, the claimed temperature can not be considered "critical". Accordingly, one having ordinary skill in the art at the time the invention was made would have routinely optimized the cooling temperature to produce tar and obtain desired rate and efficiency of operation. *In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980). And since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art.

With respect to claim 65, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize all of the tar as binder and all of the off gas as fuel in order to efficiently use the products of the reaction as well as to avoid releasing any products into the environment.

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With respect to claim 66, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use condensed tar as the sole binder source and off-gas as the sole fuel for the pyrolyzer since both are sources the most readily available binder and fuels since both are products of the reaction, as well as being economical and environmentally sound method of product use.

7. Claims 38, 39, 47, 54, 76 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loebell (1,912,002) in view of Weber et al. (4,352,720) as applied to claims 33, 42, 50 and 71 above, and further in view of Nicaud et al. (6,043,289).

With respect to claims 38, 39, 47, 54, 76 and 77, the combination of Loebell and Weber et al. applied above discloses combining separated tar (Weber et al. col. 2, lines 43-46 and col. 7, lines 44-48), as the binder (bitumen) for the binder and fines mixture of Loebell (p. 1, lines 4-11), but is silent as to if synthetic binder is used.

Nicaud et al. teaches wherein the characteristics of the conventionally obtained binder bitumen are close to those of synthetic bitumen (col. 2, lines 38-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select either conventionally obtained bitumen or synthetic bitumen as it is merely the selection of functionally equivalent binders known to the art. Additionally, the combination does not preclude one from using a synthetic binder.

Art Unit: 1764

8. Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Loebell (1,912,002) in view of Weber et al. (4,352,720) as applied to claim 50 above, and further in view of Deering et al. (4,530,752).

With respect to claim 58, Loebell discloses wherein coke breeze can be used as a feed (Loebell p. 1, lines 8-9) but fail to disclose a particular weight percent for when coke breeze is used. Deering et al. teach wherein coke breeze (fines) comprises 5-10% weight of the feed mixture for a pyrolysis system (col. 8, lines 58-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the appropriate weight percent of coke breeze, as taught by Deering et al. in order to have an operable pyrolysis occur.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alexa A. Doroshenk  
Examiner  
Art Unit 1764

June 13, 2005

  
**ALEXA DOROSHENK**  
**PRIMARY EXAMINER**